

PATENT**REMARKS**

Claims 1 - 35 were pending in the present application as originally filed. Claims 1, 8, 9, 12, 13, 16, 29, 31 and 34 are being amended, claims 15, 18-28, and 30 are being cancelled, and claims 36-50 are being added. After entry of the above amendments, claims 1-14, 16, 17, 29, and 31-50 are pending in the present application, of which claims 1, 8, 9, 12, 13, 29, 34, 35, 39, 45, and 49 are independent. Applicants believe that the present application is in condition for allowance, which prompt and favorable action is respectfully requested.

I. Allowable Claims

Applicants thank the Examiner for the allowance of claims 15, 16, 30, 31, and 35, although not specifically allowed is also not rejected.

II. REJECTION UNDER 35 U.S.C. §103**A. Claims 1-7, 8, 9-11, 12, 20-27, and 28**

The Examiner rejected claims 1-7, 8, 9-11, 12, 20-27, 28 under 35 U.S.C. §103 as being unpatentable over U.S. Patent Application Publication No. 2003/0165131 (Liang et al.) in view of U.S. Patent Application Publication No. 2002/0097697 (Bae et al.).

Claims 20-28 are being cancelled and the rejections with respect to claims 20-28 are now moot.

Claim 1 has been amended to recite "time division multiplexing the sequence of pilot chips with the sequence of data chips ... wherein a plurality of periods for the sequences of data chips are provided between periods for the sequences of pilot chips." Liang et al. discloses that a "packet comprises symbol blocks having one or more pilot blocks and one or more data blocks," (Page 4, paragraph [0076]), where for both uplink and downlink transmission pilot blocks are always adjacent to data block. *See*, Figs. 2 and 3. Moreover, Liang et al. discloses "pilot symbols are placed together as an orthogonal frequency division multiplexing (OFDM) block 42 and is common to data symbols 44 for all users." (Page 5, paragraph [0077]). Therefore, Liang et al. does not disclose that multiple periods of data chips may be time division multiplexed to be adjacent and between pilot chips. This deficiency is not made by Bae et al. Therefore, for at

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least this reason, claim 1 is allowable over Liang et al. and Bae et al. either individually or by their combination.

Claims 2-7 depend from claim 1 and are allowable for, at least, the same reasons as discussed with respect to claim 1.

Moreover, claim 5 recites, amongst other things, "wherein the data symbols are sent on different ones of the plurality of subbands in different time intervals as determined by a frequency hopping (FH) sequence." The Office Action at page 7, states that Liang discloses that "data symbols are sent on different ones of the plurality of subbands in different time intervals (see page 5, [0079], the transmission period of the pilot symbol) as determined by a frequency hop sequence." Applicants respectfully disagree, paragraph [0079] discloses that for "the packet 40 for data independent pilot symbols described in the above, channel state information is obtained during the transmission period of the pilot symbol. For the data transmission period, a decision-directed method can be used to update channel estimates." As can be seen this does not address or relate data symbol timing or location. It in no way is relevant to Frequency Hopping. Therefore, for at least this reason, claim 5 is allowable over Liang et al. and Bae et al. either individually or by their combination.

Further, Applicants submit that Liang discloses (i) a "packet 40 having data independent pilot symbols is shown in FIG. 3," (Page 5, paragraph [0077]), and (ii) "a packet 50 with a new packet structure for data dependent pilot symbols is shown in FIG. 4, wherein each OFDM symbol block 52 has only a few pilot symbols with a limited number of pilot chips," (Page 5, paragraph [0080]). That is, packets either include pilots in the same symbol, time period, as data or as a separate symbol, i.e. time period. However, there is no discussion about varying the location of data symbols in frequency, or even in time, for a given user. In fact, it appears that a user uses all of the available frequency subcarriers or band when transmitting its data, e.g. as "each uplink transmission corresponds to a single user, the pilot blocks 32 and the data blocks 34 are spread with a spread code corresponding to that user." (Page 5, paragraph [0076]), *see e.g.* Figs. 3 and 4. Therefore for at least this reason independently, claim 5 is allowable over Liang et al. and Bae et al. either individually or by their combination.

Claim 8 contains recitations similar to claim 1 and is allowable for, at least, the same reasons as discussed with respect to claim 1.

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Claim 9 contains recitations similar to claim 1 and is allowable for, at least, the same reasons as discussed with respect to claim 1.

Claims 10-11 depend from claim 9 and are allowable for, at least, the same reasons as discussed with respect to claim 9.

Claim 12 contains recitations similar to claim 1 and is allowable for, at least, the same reasons as discussed with respect to claim 1.

B. Claims 13-14, 17, 18, 19, 29, 32-33, and 34

The Examiner rejected claims 13-14, 17, 18, 19, 29, 32-33, and 34 under 35 U.S.C. §103 as being unpatentable over Bae et al. in view of Liang et al.

Claims 18 and 19 are being cancelled and the rejection with respect to claims is now moot.

Claim 13 has been amended to include recitations similar to those of allowable claim 15, and is therefore deemed allowable for at least the same reasons as claim 15.

Claims 14 and 17 depend from claim 13 and are allowable for, at least, the same reasons as discussed with respect to claim 13.

Claim 29 has been amended to include recitations similar to those of allowable claim 30, and is therefore deemed allowable for at least the same reasons as claim 30.

Claims 32 and 33 depend from claim 29 and are allowable for, at least, the same reasons as discussed with respect to claim 29.

Claim 34 has been amended to include recitations similar to those of allowable claim 30, and is therefore deemed allowable for at least the same reasons as claim 30.

III. NEW CLAIMS

New claim 36 depends from claim 1 and is allowable for at least the same reasons as discussed with respect to claim 1. Moreover, claim 36 recites that "a time between periods for the sequences of pilot chips comprises a period less than a decorrelation time for a channel through which the sequence of pilot chips are being transmitted." This recitation is not taught or disclosed by Liang et al. and Bae et al. either individually or by their combination.

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New claim 37 depends from claim 8 and is allowable for at least the same reasons as discussed with respect to claim 8. Moreover, claim 37 recites that "a time between periods for the sequences of pilot chips comprises a period less than a decorrelation time for a channel through which the sequence of pilot chips are being transmitted." This recitation is not taught or disclosed by Liang et al. and Bae et al. either individually or by their combination.

New claim 38 depends from claim 9 and is allowable for at least the same reasons as discussed with respect to claim 9. Moreover, claim 38 recites that "a time between periods for the sequences of pilot chips comprises a period less than a decorrelation time for a channel through which the sequence of pilot chips are being transmitted." This recitation is not taught or disclosed by Liang et al. and Bae et al. either individually or by their combination.

New independent claim 39 recites, amongst other things "time division multiplexing the sequence of pilot chips with the sequence of data chips" and "assigning data symbols for transmission on different ones of a plurality of subbands in different time intervals according to a frequency hopping (FH) sequence." As discussed with respect to claim 5, Liang et al. does not have a discussion about varying the location of data symbols in frequency, or even in time, for a given user, and discloses that a user uses all of the available frequency subcarriers or band when transmitting its data. Further, there is no discussion regarding Frequency Hopping or the like in Bae et al. Therefore, for at least this reason, claim 39 is allowable over Liang et al. and Bae et al. either individually or by their combination.

New claims 40-44 depend from new claim 39 and are allowable for, at least, the same reasons as discussed with respect to new claim 39.

New claim 45 contains recitations similar to new claim 39 and is allowable for, at least, the same reasons as discussed with respect to new claim 39.

New claims 46-48 depend from new claim 45 and are allowable for, at least, the same reasons as discussed with respect to new claim 45.

New claim 49 contains recitations similar to new claim 39 and is allowable for, at least, the same reasons as discussed with respect to new claim 39.

New claim 50 depends from new claim 49 and is allowable for, at least, the same reasons as discussed with respect to new claim 49.

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REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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